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Canada’s data gaps hampered COVID-19 pandemic response, hurting vaccination tracking: report

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A man enters a COVID-19 vaccination clinic in Montreal on June 16, 2021.

PAUL CHIASSON/THE CANADIAN PRESS

The pandemic has exposed significant problems with how Canada gathers and processes data on everything from case numbers to vaccinations, which has hurt the country's response to COVID-19, a new report conducted for the federal government says.

Canada could not track the spread of the virus as effectively as it needed to last year, according to a report prepared by the Pan-Canadian Health Data Strategy Expert Advisory Group that will be made public Thursday. The country is now struggling to keep tabs on vaccine effectiveness because of flaws in the system, including how different jurisdictions record and share information.

These data gaps, created by a patchwork of health systems that don't always work together and often code data in different ways, need to be addressed with a national approach, the report warns.

"There is no doubt that our response to the pandemic has been severely limited as a result," says an advance copy of the report, which was reviewed by The Globe and Mail.

Canada vaccine tracker: How many COVID-19 doses have been administered so far?

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The report was ordered by Ottawa last year to examine data problems exposed by COVID-19. The group will put together a list of recommendations to the Public Health Agency of Canada and other departments on how to fix these weaknesses, said Vivek Goel, who chaired the review.

When the COVID-19 outbreak hit, problems in reporting new cases, symptoms and other crucial data became apparent in Canada's patchwork system. Since provincial and territorial jurisdictions don't necessarily use the same standards for collecting or codifying information, pooling crucial data on a national level became difficult.

"Early on it was challenging to get a full national picture, even of basic case counts," Dr. Goel said, noting that crucial information such as the sites of the outbreaks, or the occupations of those who became ill, weren't always collected, codified, or shared between health jurisdictions. This prevented policy makers from knowing where and how hot spots were developing, and where the next crisis might be lurking.

"That [information] is something that is collected on the front lines of public health as people do their interviews, or it is collected at the time someone goes for testing. But if it's not collected in a consistent way in every place and then coded and loaded into the system, we don't wind up with a good picture," Dr. Goel said.

"I would say if we had some of that information in a more timely manner, we might have had some decisions [by the government] being made sooner," Dr. Goel said.

The country got better at processing information as the pandemic progressed, but "Canada had had some pretty significant challenges early on in even getting some of that basic data shared and uploaded," he said.

These data gaps have become magnified as the country tries to mount a rapid immunization campaign across those same varied jurisdictions. Lacking the ability to quickly and effectively pool data from around the country, Canada is struggling to track, in real time, how effectively the vaccines are working in the broader population.

"Probably the most important question around vaccination in Canada is around the effectiveness of the vaccines in the real world with the dosing schedules and approaches that we've taken in Canada, because we're the country that's taken the longest dose interval," Dr. Goel said.

"We've got reports that have started to come out, but they're coming out at the provincial level," he said. "We don't have a national report, and every province's systems are slightly different. So we wind up with slightly different estimates. They're not going to be comparable."

More detailed data on vaccine uptake is also difficult to compile, he said. "We need to have data coming together around how many people have been immunized by age group, occupation codes, all sorts of information. For example, people want to know how many teachers have had [the vaccine]. But we don't have systems that really allow us to easily bring that kind of data together," Dr. Goel said.

Questions specific to Canada, such as the effectiveness of mixing vaccines, are also hard to answer without properly collecting and analyzing data from across the country, he said. "We've got more of this mixing and matching coming up, so we need to be generating real-world evidence on how well it's working," Dr. Goel said.

The findings echo a report by the Auditor-General of Canada in March that said the government lacked proper data procedures to accurately track the spread of the virus. Dr. Goel

said the issues are due to a number of causes, from lack of investment and concerns over privacy breaches to provinces simply wanting to oversee their own systems.

He also noted that various reports and governments have tried to address these issues in the past, but the problems were never fixed. After the 2003 SARS outbreak, Ottawa oversaw the creation of a database system known as Panorama, intended to improve infectious-disease surveillance and immunization tracking on a national level. However, the project struggled to gain support, ran into numerous roadblocks and was never effective.

"Despite all these good intentions, we don't seem to make the progress we'd like to see," said Dr. Goel, a professor at the University of Toronto's Dalla Lana School of Public Health who is leaving to become president of the University of Waterloo next month.

The report calls for Ottawa to work with provinces and territories, as well as First Nations, Inuit and Métis organizations, to build a system where health data, including information on outbreaks and immunization, can be pooled effectively, and governments can act faster. Overcoming privacy concerns is a key challenge, and any such initiative must ensure that personalized information is protected, the report says.

"We need to tackle the root causes of the problems that have plagued our ability to make progress toward a common aim for all Canadians," the report says. "Put simply, our systems, processes and policies are geared towards an analog world, while we live in a digital age."

Dr. Goel said there are several examples of countries that collect, share and process data better than Canada, while still protecting privacy and respecting regional autonomy. Several Scandinavian countries have systems Canada should seek to emulate, he said, while the British, despite having data challenges of their own, have a more effective surveillance system implemented across England, Scotland, Wales and Northern Ireland.

"There are models for how we could approach that in Canada, but until we get to the point where we work together on these things, we wind up with these siloed sorts of approaches across the country," Dr. Goel said.

"These issues have been underscored through Canada's response to COVID-19," the report says. The challenges include "timely collection and use of testing, case and vaccination data; assessing impacts of the pandemic in specific populations; sharing genomic data for management of variants; and the persistent challenges of long-term care."

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